REMARKS/ARGUMENTS

Claims 1-5 are pending.

Claims 1 and 14 have been amended.

Claims 4-13 has been withdrawn.

Support for the amendments is found in the claims and specification (page 6, lines 23-25), as originally filed.

No new matter is believed to have been added.

Claims 1-3 are rejected under 35 U.S.C. 102(b) over Ito et al., JP 09-201424. The rejection is traversed because Ito et al. do not describe a deodorant comprising a powder of amine salt of a phosphorous inorganic acid having an average particle diameter of 5-20 μm.

Ito et al. describe a fire extinguishing powder which is a mixture of ammonium dihydrophosphate and ammonium sulfate (abstract).

The Examiner points out that the Ito et al. extinguishing agent comprises a powder of ammonium dihydrogen phosphate having diameter of 1.5 to 53 microns. However, Ito et al. do not disclose ammonium dihydrogen phosphate having diameter of 1.5 to 53 microns.

Ito et al. disclose the following (i) and (ii) (abstract):

(i) The extinguishing agent comprises a mixed powder of mainly ammonium dihydrogen phosphate and ammonium sulfate.

(ii) The mixed powder is prepared so as to have a weight ratio of the powder having diameter of 53 microns or less to the powder having diameter of 20 microns or less is in a range of 2.4-3.1 and also a weight ratio of the powder having diameter of 38 microns or less to the powder having diameter of 20 microns or less is in a range of 1.5-2.0.

Thus, the powder of Ito et al. is prepared so as to satisfy the following ratios:

$$\frac{\text{The powder having diameter of 53 microns or less}}{\text{The powder having diameter of 20 microns or less}} = \text{2.4 to 3.1 (weight ratio)}$$

or

$$\frac{\text{The powder having diameter of 38 microns or less}}{\text{The powder having diameter of 20 microns or less}} = \text{1.5 to 2.0 (weight ratio)}$$

The Ito et al. powder inevitably contains larger particles (i.e., 53 μm or 38 μm) in a significantly greater amount than the particles of the smaller size (i.e., 20 μm).

Ito et al. disclose that a standard shifter of JIS Z8001 having a diameter of 70 mm is used [0017]. Since the shifter of JIS Z8001 has fine openings of 53 μm, 30 μm and 20 μm, sonic sifting is employed. The main component powder is adjusted such that the particle diameter of 50% cumulative distribution is 40 ± 3μm to 60 ± 3μm (paragraph [0017], see the attached automatic English translation).

Therefore, the average particle diameter of Ito et al.'s powder cannot be 5 μm to 20 μm base on the disclosure of Ito et al. Thus, Ito et al. do not anticipate the claimed powder.

Also, Ito et al. do not make the claimed powder obvious. The Examples of the present specification show that when the powder of Examples 1 and 2 is compared with the powder of Comparative Example 3, it is apparent that an amine salt of a phosphorus inorganic acid whose average particle diameter is not 5 to 20 μm cannot give advantageous effects of the claimed powder. Thus, the claimed powder provides a superior result.

In addition, in would not have been obvious to modify the powder of Ito et al. to obtain the powder comprising an amine salt of a phosphorus inorganic acid having an average particle diameter of 5 to 20 μm because Ito et al. is solving a problem of providing a fire extinguisher for an oil fire [0005], while the claimed deodorant powder inhibits formaldehyde emission from materials and odor in the environment (page 3 of the present specification).

Thus, Ito et al. do not anticipate and do not make the claimed deodorant powder obvious. Applicants request that the rejection be withdrawn.

Claim 14 is rejected under 35 U.S.C. 103(a) over Ita et al. and Pearson, US 4,552,803. The rejection is traversed because the combination of the references does not describe or suggest a deodorant comprising a powder of amine salt of a phosphorous inorganic acid having an average particle diameter of 5-20 μm.

The disclosure of Ito et al. is described above. Ito et al. do not describe a deodorant powder of an amine salt of a phosphorous inorganic having an average particle diameter of 5-20 μm.

Pearson does not cure the deficiency. Pearson describe a fire retardant composition comprising a powder of ammonium phosphate.

However, Pearson does not describe an average diameter of the particles of 5-20 μm. Pearson does not recognize that the average diameter is important for fire retardation. The fire retardation composition of Pearson is required to comprise a specific amount of various components to provide satisfactory fire retardation, but is not required to have a specific particle size. Therefore, selecting and adjusting the particle size is not a result-effective variable because the prior art first has to first recognize that a particular property (i.e., inhibition of a formaldehyde emission from materials and odor in the environment) is a function of the size of the powder comprising an amine salt of a phosphorous inorganic acid. The cited references do not recognize such a dependency.

In addition, Examples 1-2 and Comparative Example 3 of the present specification show that an amine salt of a phosphorus inorganic acid whose average particle diameter is not 5 to 20 μm cannot give advantageous effects of the claimed powder.

Thus, Ito et al. and Pearson do not make the claimed deodorant obvious. Applicants request that the rejection be withdrawn.

The above-identified application is a national stage of the PCT/JP04/16828 application, filed November 12, 2004, which claims priority to the Japanese application JP 2003-385543, filed November 14, 2003. Applicants submitted a certified copy of the priority application and a Request for Priority under 35 U.S.C. 119 on May 12, 2006.

Applicants request that the foreign priority be acknowledged.

A Notice of Allowance for all pending claims is requested.

Respectfully submitted,

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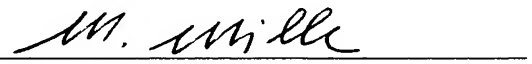

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[Claim(s)]
[Claim 1]A gas introducing pipe and a siphon tube which were installed in an inside of a container towards drugs from powdered drugs, an application-of-pressure cylinder, and the application-of-pressure cylinder concerned, And in a fire extinguisher which has a sealing plate which plugs up an opening of the siphon tube concerned, and emits said drugs outside by opening of said application-of-pressure cylinder, While the highest ultimate pressure in a container by opening of said application-of-pressure cylinder is 6.5**1.5 kgf/cm^2, a sealing plate bursting pressure is 4.5**1.5 kgf/cm^2 and radiation duration time is 15 **5 seconds, Said drugs use ammonium phosphate powder, ammonium sulfate powder, or both powder mixture as the main ingredients, and powder of the main ingredients concerned, An abundance ratio (53 micrometers less than/20 micrometers or less) of powder with a particle diameter of 53 micrometers or less to powder with a particle diameter of 20 micrometers or less, . [whether it is prepared so that it may become the range of 2.4-3.1 by a weight ratio, and] Or a fire extinguisher, wherein an abundance ratio (38 micrometers less than/20 micrometers or less) of powder with a particle diameter of 38 micrometers or less to powder with a particle diameter of 20 micrometers or less is prepared so that it may become the range of 1.5-2.0 by a weight ratio.
[Claim 2]The fire extinguisher according to claim 1, wherein time which it will take before reaching top pressure while container internal pressure emanates from opening of an application-of-pressure cylinder is 1.0 **0.4 seconds and quantity of drugs which remain in a container after an end of radiation is 10 or less % of the weight.
[Claim 3]The fire extinguisher according to claim 1 or 2, wherein the main ingredients of a gas in an application-of-pressure cylinder are carbon dioxide, ammonium phosphate powder contained as the main ingredients of drugs is ammonium dihydrogenphosphate and powdered some or all that forms drugs is what is given a water-repellent finish.

TECHNICAL FIELD

[Field of the Invention]This invention relates to what has the high fire extinguishing performance to an ordinary fire (wood fire) especially about the pressure type powder fire extinguisher which has an application-of-pressure cylinder in a container.

DETAILED DESCRIPTION

[Detailed Description of the Invention]
[0001]
[Field of the Invention]This invention relates to what has the high fire extinguishing performance to an ordinary fire (wood fire) especially about the pressure type powder fire extinguisher which has an application-of-pressure cylinder in a container.
[0002]
[Description of the Prior Art]As a conventional powder fire extinguisher, powder mixture of ammonium dihydrogenphosphate and ammonium sulfate is used as the main ingredients of fire-extinguishing drugs, It has in a container an application-of-pressure

cylinder containing the gas which uses carbon dioxide as the main ingredients, there is a pressure type fire extinguisher which opens an application-of-pressure cylinder at the time of fire extinguishing, and emits a powder agent to the container exterior, and this fire extinguisher is widely used as an ordinary fire (wood fire), an oil fire, or an object for electric fires.

[0003]About such a powder fire extinguisher, it is said that fire extinguishing capacity becomes high, so that the particle size of fire-extinguishing drugs powder is small. In relation to this, if the compounding ratio of the ammonium sulfate mixed for cost reduction is made high, fire extinguishing performance will fall to JP,58-175575,A, but improving the fall of such fire extinguishing performance by making the particle size of the whole powder mixture smaller than before is indicated.That is, even if it adds many ammonium sulfate to 60% of the weight of the whole powder mixture by including [an ingredient with a particle diameter of 37 micrometers or less] the whole particle size distribution for a with 45 to 70 % of the weight, or a particle diameter of 50 micrometers or less ingredient 55 to 80% of the weight, it is supposed that fire extinguishing performance can be held.

[0004]Improving the mobility of fire-extinguishing drugs powder is indicated by JP,53-28399,B by giving a water-repellent finish by silicone etc. to the surface of drugs particles as other methods of raising fire extinguishing performance.

[0005]

[Problem(s) to be Solved by the Invention]However, since the whole surface area will become large like said conventional technology if the particle diameter of fire-extinguishing drugs powder is made small, improvement in fire extinguishing performance is expected, but. it was about the oil fire that improvement in fire extinguishing performance is actually effectively obtained with this art, and the fire extinguishing performance to an ordinary fire (wood fire) was not so high. Improvement in fire extinguishing performance is not fully obtained only by said water-repellent finish.

[0006]This invention is made in order to solve the technical problem of such conventional technology, and it provides the powder fire extinguisher excellent in the fire extinguishing performance especially to an ordinary fire (wood fire).

[0007]

[Means for Solving the Problem]In order to solve an aforementioned problem, an invention of claim 1, A gas introducing pipe and a siphon tube which were installed in an inside of a container towards drugs from powdered drugs, an application-of-pressure cylinder, and the application-of-pressure cylinder concerned, And in a fire extinguisher which has a sealing plate which plugs up an opening of the siphon tube concerned, and emits said drugs outside by opening of said application-of-pressure cylinder, While the highest ultimate pressure in a container by opening of said application-of-pressure cylinder is 6.5**1.5 kgf/cm^2, a sealing plate bursting pressure is 4.5**1.5 kgf/cm^2 and radiation duration time is 15 **5 seconds, Said drugs use ammonium phosphate powder, ammonium sulfate powder, or both powder mixture as the main ingredients, and powder of the main ingredients concerned, An abundance ratio (53 micrometers less than/20 micrometers or less) of powder with a particle diameter of 53 micrometers or less to powder with a particle diameter of 20 micrometers or less, . [whether it is prepared so that it may become the range of 2.4-3.1 by a weight ratio, and] Or a fire extinguisher, wherein an abundance ratio (38 micrometers less than/20 micrometers or less) of powder

with a particle diameter of 38 micrometers or less to powder with a particle diameter of 20 micrometers or less is prepared so that it may become the range of 1.5-2.0 by a weight ratio is provided.
[0008]What was ground in the state where powder of said main ingredients changes a crushed degree by a grinder, for example, and many powder with a particle diameter of 20 micrometers or less exists (the end of a high pulverized powder), Powder mixture which mixed by each ratio what was ground in the state where many powder of particle diameter over 20 micrometers exists (the end of a low pulverized powder), Weight of powder in which a difference of a sieve eye was missing from a standard sieve of JIS which is 53 micrometers, 38 micrometers, and 20 micrometers, and passed each sieve is measured, Both sieve Ryo Shimoju's ratio (20 micrometers and 53 micrometers) (53 micrometers less than/20 micrometers or less), Both sieve Ryo Shimoju's ratio (20 micrometers and 38 micrometers) (38 micrometers less than/20 micrometers or less) is computed beforehand, It is obtained by mixing both powder with the mixture ratio of the end of a high pulverized powder and the end of a low pulverized powder in case said ratios (53 micrometers less than/20 micrometers or less) are 2.4-3.1 or said ratios (38 micrometers less than/20 micrometers or less) are 1.5-2.0.
[0009]As for powder of said main ingredients, it is preferred that a maximum droplet size is ground by 177 micrometers or less. The highest ultimate pressure means top pressure which reaches during radiation, and can adjust it by changing a size or application-of-pressure cylinder pressure of a diameter of opening of an application-of-pressure cylinder. A sealing plate bursting pressure is a pressure by which a sealing plate is destroyed by rise of container internal pressure accompanying opening of an application-of-pressure cylinder, and it can adjust by changing thickness of a sealing plate, or changing stiffness of a sealing plate by selection of material.
[0010]Radiation duration time can be adjusted by changing gas volume of changing a path of a transit route, or an application-of-pressure cylinder, etc. Time (top pressure time of concentration) which it will take before an invention of claim 2 reaches top pressure in a fire extinguisher of claim 1 while container internal pressure emanates from opening of an application-of-pressure cylinder is 1.0 **0.4 seconds, A thing, wherein quantity (radiation residue) of drugs which remain in a container after an end of radiation is 10 or less % of the weight is provided.
[0011]Top pressure time of concentration can be adjusted by changing an opening diameter of an application-of-pressure cylinder, application-of-pressure cylinder pressure, or transit route resistance etc. A radiation residue can be adjusted changing an interval of a tip of a siphon tube, and a container bottom, or by changing the direction of a tip of a siphon tube. In a fire extinguisher of claim 1 or 2, the main ingredients of a gas in an application-of-pressure cylinder of an invention of claim 3 are carbon dioxide, Ammonium phosphate powder contained as the main ingredients of drugs is ammonium dihydrogenphosphate, and a thing, wherein powdered some or all that forms drugs is what is given a water-repellent finish is provided.
[0012]Material which has water repellence like silicone, for example to each or powder mixture to each drugs powder can be added, it can mix, and a water-repellent finish to powder which forms drugs can be performed by heating and drying. In this invention, drugs Ammonium phosphate powder independence, ammonium sulfate powder independence, Either of the mixtures of ammonium phosphate powder and ammonium

sulfate powder can be used as the main ingredients, In the case of a mixture, the mixture ratio is not limited, but it is preferred from a point of fire extinguishing performance to use as the main ingredients a mixture mixed by ammonium phosphate powder:ammonium sulfate powder =35-70:65 - 30 (weight ratio).
[0013]As ammonium phosphate powder which is the main ingredients of drugs, like claim 3, Although it is preferred to use ammonium dihydrogenphosphate ($NH_4H_2PO_4$), diammonium hydrogen phosphate (NH_4) ($_2HPO_4$) may be used. As for drugs in this invention, it is preferred to contain an additive agent for adjusting physical properties, such as mobility and relative bulk density, in addition to said main ingredients, and white carbon which used silica as the main ingredients, AERO gell, a certain ** silicone, etc. are mentioned as such an additive agent.
[0014]
[Embodiment of the Invention]Hereafter, the embodiment of this invention is described based on a concrete example. In each example, the additive agent was mixed at about ten% of the weight of a rate to main-ingredients powder, using the mixture (ammonium dihydrogenphosphate: ammonium sulfate =40 - 60 weight section : 50 to 60 weight section) of ammonium-dihydrogenphosphate powder and ammonium sulfate powder as the main ingredients of drugs. A water-repellent finish by silicone was given to all of main-ingredients powder.
[0015]The abundance ratio (53 micrometers less than/20 micrometers or less) about the main-ingredients powder of drugs, and adjustment of (38 micrometers less than/20 micrometers or less), The crushed degree by a grinder was changed and it carried out by mixing what was ground in the state where many powder with a particle diameter of 20 micrometers or less exists (the end of a high pulverized powder), and the thing (the end of a low pulverized powder) ground in the state where many powder of the particle diameter over 20 micrometers exists by each ratio.
[0016]And the weight of the powder which passed each sieve having covered each obtained powder mixture over the standard sieve of JIS whose difference of a sieve eye is 53 micrometers, 38 micrometers, and 20 micrometers is measured, Both sieve Ryo Shimoju's ratio (20 micrometers and 53 micrometers) (53 micrometers less than/20 micrometers or less), Both sieve Ryo Shimoju's ratio (20 micrometers and 38 micrometers) (38 micrometers less than/20 micrometers or less) was computed, (53 micrometers less than/20 micrometers or less) used it for the thing of 2.2, 2.4, 3.1, and 3.2, and (38 micrometers less than/20 micrometers or less) used the thing of 1.3, 1.5, 2.0, and 2.2 for the experiment.
[0017]The used standard sieve was a standard sieve (70 mm in diameter) of JIS Z8001, and since a difference of a sieve eye was as detailed as 53 micrometers, 38 micrometers, and 20 micrometers, the method of applying to which and screening a sound wave was used for it. In any case, as for the particle size distribution of the main-ingredients powder of drugs, it is adjusted so that it may become a range whose particle diameter is 40**3 micrometers - 60**3 micrometers 50% by cumulative distribution.
[0018]So that what uses the carbon dioxide by Miyata Industry Co., Ltd. as the main ingredients may be used as an application-of-pressure cylinder using such drugs and the highest ultimate pressure, a sealing plate bursting pressure, and radiation duration time may serve as a preset value for every example, respectively, All top pressure time of concentration goes into the range for 1.0 **0.4 seconds, and all radiation residues

produce the pressurizing type powder fire extinguisher of the same capacity designed become 10 or less % of the weight, By the method according to wood fire extinguishing of the basic ministerial ordinance (autonomous ministerial ordinance No. 27 dated September 17 of Showa 39), fire extinguishing performance was measured in the environment of 21**6 **.

[0019]Pressure-sensor PGM-20KE by Kyowa Electronic Instruments Co., Ltd. was installed in the gaseous layer part of the upper part in a container, and container-internal-pressure measurement of the fire extinguisher was performed to this by connecting the electromagnetism oscillograph recorder by Yokogawa Electric Corp. (2932-phot coda). And the continuous upward transmitting wave form produced by the rise of internal pressure measured the sealing plate bursting pressure as a pressure when it becomes discontinuous, before reaching the highest ultimate pressure. After internal pressure passed over the highest ultimate pressure and turned into low pressure to some extent, radiation duration time was measured as time until a rapid pressure drop is shown, when drugs were lost.

[An experiment which investigated the relation between example 1:radiation duration time and an abundance ratio (53 micrometers less than/20 micrometers or less), and the relation between a sealing plate bursting pressure and an abundance ratio (53 micrometers less than/20 micrometers or less)] The top pressure ultimate pressure and the sealing plate bursting pressure were carried out within the limits of this invention, radiation duration time and an abundance ratio (53 micrometers less than/20 micrometers or less) were changed as shown in the following table 1, fire extinguishing performance was evaluated, and the range of this invention was verified from correlation with radiation duration time and an abundance ratio (53 micrometers less than/20 micrometers or less).

[0020]The top pressure ultimate pressure considered it as 7.5**0.5 kgf/cm^2, and the sealing plate bursting pressure was taken as 5.5**0.5 kgf/cm^2 and 3.5**0.5 kgf/cm^2. Evaluation of fire extinguishing performance is performed in three steps, "O" which is satisfactory practically, "**" from which performance falls somewhat, and practically insufficient "x", and the result is combined with the following table 1, and is shown. It is shown that "-" in front is not experimenting. Even when sealing plate bursting pressures were any of 5.5**0.5 kgf/cm^2 and 3.5**0.5 kgf/cm^2, the same result shown in the following table 1 was obtained.

[0021]

[Table 1]

		存在比（≦53μm／≦20μm）			
		2．2	2．4	3．1	3．2
放射継続時間	25±2（秒）	−	×	△	−
	18±2（秒）	△	○	○	×
	12±2（秒）	×	○	○	×
	8±1（秒）	−	×	△	−

※封板破壊圧：本発明の範囲内

[0022]The result of having investigated correlation with radiation duration time and an abundance ratio (53 micrometers less than/20 micrometers or less) like the above is shown in the following table 2 except having made the sealing plate bursting pressure into 7.5**0.5 kgf/cm^2 and 2.5**0.4 kgf/cm^2 which are outside the range of this invention. Even when sealing plate bursting pressures were any of 7.5**0.5 kgf/cm^2 and 2.5**0.4 kgf/cm^2, the same result shown in the following table 2 was obtained.
[0023]
[Table 2]

		存在比（≦53μm／≦20μm）			
		2．2	2．4	3．1	3．2
放射継続時間	25±2（秒）	－	－	－	－
	18±2（秒）	－	△～×	△～×	－
	12±2（秒）	×	△～×	△～×	－
	8±1（秒）	－	－	×	－

※封板破壊圧：本発明の範囲外

[0024]As shown in Table 1, when both radiation duration time and an abundance ratio (53 micrometers less than/20 micrometers or less) are in the range of this invention, evaluation of fire extinguishing performance is "O", but if either separates from the range of this invention at least, evaluation of fire extinguishing performance is "x" or "**." Even if an abundance ratio (53 micrometers less than/20 micrometers or less) is 2.4-3.1 which are the ranges of this invention by this, when it separates from 10 to 20 seconds whose radiation duration time is the ranges of this invention, it turns out that fire extinguishing performance falls.
[0025]The result of Table 1 and Table 2 is compared, and even if both radiation duration time and an abundance ratio (53 micrometers less than/20 micrometers or less) are the ranges of this invention, when a sealing plate bursting pressure separates from 3.0 which is the range of this invention - a 6.0 kgf/cm^2 second, it turns out that fire extinguishing performance falls.
[An experiment which investigated the relation between example 2:radiation duration time and an abundance ratio (38 micrometers less than/20 micrometers or less)] The top pressure ultimate pressure and the sealing plate bursting pressure were carried out within the limits of this invention, radiation duration time and an abundance ratio (38 micrometers less than/20 micrometers or less) were changed as shown in the following table 3, fire extinguishing performance was evaluated, and the range of this invention was verified from correlation with radiation duration time and an abundance ratio (38 micrometers less than/20 micrometers or less).
[0026]The top pressure ultimate pressure considered it as 7.5**0.5 kgf/cm^2, and the sealing plate bursting pressure was taken as 5.5**0.5 kgf/cm^2 and 3.5**0.5 kgf/cm^2.
[0027]
[Table 3]

		存在比（≦38μm／≦20μm）			
		1．3	1．5	2．0	2．2
放射継続時間	25±2（秒）	−	×	×	−
	18±2（秒）	△	○	○	×
	12±2（秒）	△	○	○	×
	8±1（秒）	−	×	×	−

[0028]As shown in Table 3, when both radiation duration time and an abundance ratio (38 micrometers less than/20 micrometers or less) are in the range of this invention, evaluation of fire extinguishing performance is "O", but if either separates from the range of this invention at least, evaluation of fire extinguishing performance is "x" or "**." Even if an abundance ratio (38 micrometers less than/20 micrometers or less) is 1.5-2.0 which are the ranges of this invention by this, when it separates from 10 to 20 seconds whose radiation duration time is the ranges of this invention, it turns out that fire extinguishing performance falls.

[An experiment which investigated the relation between the example 3:highest ultimate pressure and an abundance ratio (53 micrometers less than/20 micrometers or less)] Radiation duration time and a sealing plate bursting pressure were carried out within the limits of this invention, the highest ultimate pressure and the abundance ratio (53 micrometers less than/20 micrometers or less) were changed as shown in the following table 4, fire extinguishing performance was evaluated, and the range of this invention was verified from correlation with the highest ultimate pressure and an abundance ratio (53 micrometers less than/20 micrometers or less).

[0029]Radiation duration time was made into 12 **2 seconds and, and 18 **2 seconds, and the sealing plate bursting pressure was taken as 5.5**0.5 kgf/cm^2. The experiment of highest ultimate-pressure 5.5**0.5 kgf/cm^2 performed the difference (highest ultimate-pressure-sealing plate bursting pressure) of the highest ultimate pressure and a sealing plate bursting pressure as more than 0.2 kgf/cm^2. Even when radiation duration time was any for 12 **2 seconds and, and 18 **2 seconds, the same result shown in the following table 4 was obtained.

[0030]

[Table 4]

		存在比（≦53μm／≦20μm）			
		2．2	2．4	3．1	3．2
最高到達圧	9.0 ±0.5(kgf/cm²)	−	△	△	−
	7.5 ±0.5(kgf/cm²)	△	○	○	×
	5.5 ±0.5(kgf/cm²)	×	○*1)	○*1)	×
	4.0 ±0.5(kgf/cm²)	−	−*2)	−*2)	−

※封板破壊圧：5．5±0．5(kgf/cm²)
＊1）：（最高到達圧－封板破壊圧）≧0．2(kgf/cm²)
＊2）：封板破壊せず

[0031]The result of having investigated correlation with radiation duration time and an abundance ratio (53 micrometers less than/20 micrometers or less) like the above is shown in the following table 5 except having made the sealing plate bursting pressure into 3.5**0.5 kgf/cm^2.

[0032]

[Table 5]

		存在比（≦53μm／≦20μm）			
		2．2	2．4	3．1	3．2
最高到達圧	9.0 ±0.5(kgf/cm²)	−	×	×	−
	7.5 ±0.5(kgf/cm²)	△	○	○	×
	5.5 ±0.5(kgf/cm²)	×	○	○	×
	4.0 ±0.5(kgf/cm²)	−	−	−	−

※封板破壊圧：3．5±0．5(kgf/cm²)

[0033]As shown in Tables 4 and 5, when both the highest ultimate pressure and an abundance ratio (53 micrometers less than/20 micrometers or less) are in the range of this invention, evaluation of fire extinguishing performance is "O", but if either separates from the range of this invention at least, evaluation of fire extinguishing performance is "x" or "**." Even if an abundance ratio (53 micrometers less than/20 micrometers or less) is 2.4-3.1 which are the ranges of this invention by this, when the highest ultimate pressure separates from 5.0 which is the range of this invention - 8.0 kgf/cm^2, it turns out that fire extinguishing performance falls.

[0034]In the experiment of highest ultimate-pressure 4.0**0.5 kgf/cm^2 in Table 4, since the highest ultimate pressure was setting out lower than a sealing plate bursting pressure, a sealing plate did not break, and radiation of drugs was not completed.

[An experiment which investigated the relation between the example 4:highest ultimate pressure and an abundance ratio (38 micrometers less than/20 micrometers or less)]

Radiation duration time and a sealing plate bursting pressure were carried out within the limits of this invention, the highest ultimate pressure and the abundance ratio (38 micrometers less than/20 micrometers or less) were changed as shown in the following

table 6, fire extinguishing performance was evaluated, and the range of this invention was verified from correlation with the highest ultimate pressure and an abundance ratio (38 micrometers less than/20 micrometers or less).

[0035]Radiation duration time was made into 12 **2 seconds and, and 18 **2 seconds, and the sealing plate bursting pressure was taken as 5.5**0.5 kgf/cm^2. The experiment of highest ultimate-pressure 5.5**0.5 kgf/cm^2 performed the difference (highest ultimate-pressure-sealing plate bursting pressure) of the highest ultimate pressure and a sealing plate bursting pressure as more than 0.2 kgf/cm^2. Even when radiation duration time was any for 12 **2 seconds and, and 18 **2 seconds, the same result shown in the following table 6 was obtained.

[0036]

[Table 6]

		存在比（≦38μm／≦20μm）			
		1．3	1．5	2．0	2．2
最高到達圧	9.0 ±0.5(kgf/cm²)	−	×	△	−
	7.5 ±0.5(kgf/cm²)	×	○	○	×
	5.5 ±0.5(kgf/cm²)	−	○*1)	○*1)	−
	4.0 ±0.5(kgf/cm²)	−	−	−	−

※封板破壊圧：5．5±0．5(kgf/cm²)
＊1）：（最高到達圧－封板破壊圧）≧0．2(kgf/cm²)

[0037]The result of having investigated correlation with radiation duration time and an abundance ratio (38 micrometers less than/20 micrometers or less) like the above is shown in the following table 7 except having made the sealing plate bursting pressure into 3.5**0.5 kgf/cm^2. Even when radiation duration time was any for 12 **2 seconds and, and 18 **2 seconds, the same result shown in the following table 7 was obtained.

[0038]

[Table 7]

		存在比（≦38μm／≦20μm）			
		1．3	1．5	2．0	2．2
最高到達圧	9.0 ±0.5(kgf/cm²)	−	×	×	−
	7.5 ±0.5(kgf/cm²)	−	○	○	×
	5.5 ±0.5(kgf/cm²)	×	○	○	×
	4.0 ±0.5(kgf/cm²)	−	−	−	−

※封板破壊圧：3．5±0．5(kgf/cm²)

[0039]As shown in Tables 6 and 7, when both the highest ultimate pressure and an abundance ratio (38 micrometers less than/20 micrometers or less) are in the range of this invention, evaluation of fire extinguishing performance is "O", but if either separates from the range of this invention at least, evaluation of fire extinguishing performance is

"x" or "**." Even if an abundance ratio (38 micrometers less than/20 micrometers or less) is 1.5-2.0 which are the ranges of this invention by this, when the highest ultimate pressure separates from 5.0 which is the range of this invention - 8.0 kgf/cm^2, it turns out that fire extinguishing performance falls.

[0040]In a pressurizing type powder fire extinguisher, the mixture of ammonium-dihydrogenphosphate powder and ammonium sulfate powder is used as the main ingredients as drugs so that the above example may show, While making the abundance ratio (53 micrometers less than/20 micrometers or less) of the powder of the main ingredients concerned, or (38 micrometers less than/20 micrometers or less) into the range of this invention, Fire extinguishing performance of an ordinary fire (wood fire) can be made high by making the highest ultimate pressure in a container, a sealing plate bursting pressure, and radiation duration time into the range of this invention.

[0041]Therefore, the fire extinguisher of this invention is effective as a fire extinguisher only for an ordinary fire (wood fire), and effective also as a general-purpose ABC fire extinguisher used also for an ordinary fire (wood fire).

[0042]

[Effect of the Invention]As explained above, according to this invention, about a pressurizing type powder fire extinguisher as main-ingredients powder of drugs, While using what the abundance ratio (53 micrometers less than/20 micrometers or less) of specific particle diameter or (38 micrometers less than/20 micrometers or less) were specified as, The fire extinguisher which was excellent in the fire extinguishing performance especially to an ordinary fire (wood fire) by fulfilling specific conditions in the discharge mechanism of drugs can be obtained.

[0043]The fire extinguisher of claims 2 and 3 will become effective especially in respect of fire extinguishing performance and cost.

TECHNICAL PROBLEM

[Problem(s) to be Solved by the Invention]However, since the whole surface area will become large like said conventional technology if the particle diameter of fire-extinguishing drugs powder is made small, improvement in fire extinguishing performance is expected, but. It was about the oil fire that improvement in fire extinguishing performance is actually effectively obtained with this art, and the fire extinguishing performance to an ordinary fire (wood fire) was not so high. Improvement in fire extinguishing performance is not fully obtained only by said water-repellent finish.

[0006]This invention is made in order to solve the technical problem of such conventional technology, and it provides the powder fire extinguisher excellent in the fire extinguishing performance especially to an ordinary fire (wood fire).